

Successful Methods

A Magazine of Construction Service

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The National Road Show and Convention

THE 1926 National Road Show at Chicago did not merely break records. It was an industrial exhibition worthy of the vast manufacturing business which made it possible. The 1926 Convention of the American Road Builders' Association also set new standards for an assembly of men representing the various branches of road building activity. There are, however, certain phases of both events which can be greatly improved. With the progress made this year, the necessary changes should be accomplished within the next two years or less.

Lack of space to permit proper display of road machinery and materials remains the worst problem of the show. The Highway Industries Exhibitors' Association very properly urged that the 1927 show be held in Chicago. This request will certainly not be denied. Hence there is no chance for more space for next year's show. Nor would there be even as much space in any other centrally located city which can house the crowds. But in 1928 an immense new building in Chicago will solve this problem.

Outside of the lack of space, there seems to be little room for improvement in the show from either the visitors' or the exhibitors' viewpoint. Certainly, the visitors could not expect anywhere to see such a vast practical display as is made at the National Road Show. That the exhibitors are satisfied may be concluded from the great demand each year for space.

In recent years the Show has been the tail that wagged the dog. Some progress was made in 1925 toward arousing greater interest in the convention sessions. But there remained a long way to travel in that direction. Much of the distance was covered this year.

The results obtained were due chiefly to the vision displayed by the president of the American Road Builders' Association, William H. Connell, in the new program plans which he adopted. These plans were most effectively developed by Frank T. Sheets and S. M. Williams, who were respectively chairmen of the engineer's section and the construction section into which the program was divided.

The papers presented at the sessions of the two sections were keen and practical. The joint meetings also were a great improvement over anything accomplished at previous conventions. The fact that the programs were appreciated was best shown by the crowds which filled the meeting places at every session. And these crowds stayed, too, right to the end. Moreover, every session ran overtime, some as much as an hour.

There was, however, a serious lack of discussion. It is true that there was more discussion than usual. But there was not a fraction of what should take place. Time for such discussion easily could be provided by having the papers condensed in advance by a committee of experienced editors. Discussion also could be aroused simply by the appointment well in advance of men competent to lead on the different subjects.

Probably no feature of the road builders' week at Chicago showed so clearly what the right kind of leadership will do as did the annual banquet. President Connell very properly set out to raise the standard of that event to the level on which it should be conducted. He surprised everyone, and probably even himself, by the results. The brief program was an inspiration to every red-blooded man who attended. It set a mark which must be maintained in the future.

These great annual events cannot be considered without reference to the Association which sponsors them. The American Road Builders' Association seems to have arrived. It woefully lacks, however, a membership list big enough really to be representative of the vast number of men directly and indirectly engaged in the roadbuilding program of this country. The problem of increasing this list has been up many times in recent years. The new administration faces nothing more serious than a solution of it. And certainly it can be solved, since thousands of men would be willing to join an Association if the matter were presented to them in the right way.

No Let-Up

THIS winter has seen more construction operations continued without interruption than ever before. There are a few classes of field work, notably concrete road building, on which economical methods of continuing in the winter have not been evolved. It has, however, become accepted practice to go right ahead with nearly all kinds of building work. Much dirt moving has commonly been continued during cold weather in the past. Now we see more and more mass work of all kinds being done.

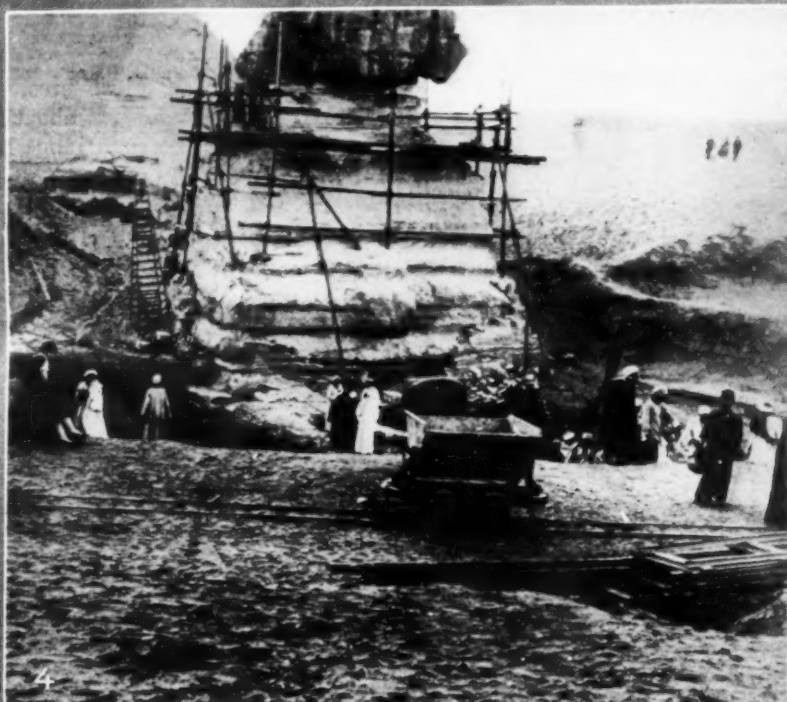
Working in cold weather can be made to pay with less expense for protection of men and the job than is usually realized by the uninitiated. In fact, these days when projects must be hurried to completion in order to start to earn returns, more can be spent to avoid a shut-down. Owners have forced this viewpoint on engineers to an increasing extent, which accounts for so many full-time winter jobs.

The Construction Field



1. Getting down to fundamentals in a building excavation. The air drill is indispensable in modern foundation work. © Keystone
2. A bucket of mud is christened with champagne. The breaking through of the new connection between the Manasquan River and Barnegat Bay was celebrated in royal style. Mrs. Charles Gates of Point Pleasant broke the bottle. © International
3. A visible proof that Florida real estate is going up. © P. & A. Photos

Never Lacks Variety



4. The engineers and builders are trying out some of their theories on the Sphinx. A scaffold has been built and the famous monument is being strengthened and otherwise rehabilitated. © International
5. The demolition of St. John's Church, East Ham, England, gave one of the workmen a chance to show his daring. © P. & A. Photos
6. The City of Paris has been extending the Boulevard Haussmann. This photograph shows the big job under way. © Kadel & Herbert

BUILDING A MODERN FREIGHT TERMINAL

More Than Fifty Miles of Track Constructed in John Sevier Yard on Southern System—Heavy Grading Necessary

AS part of its progressive policy for the development of its great system, the Southern Railway recently completed a modern freight terminal near Knoxville, Tenn. This terminal, which is known as the John Sevier Yard, was built by the Foundation Company of New York City, which planned the work in collaboration with the engineers and operating officials of the Southern Railway.

The magnitude of a job of this character is hard to realize after the work has been completed as the finished yard shows little evidence of the vast amount of grading and construction which was necessary. The statement that the yard contains 51 miles of standard gage track may help the reader to realize the great



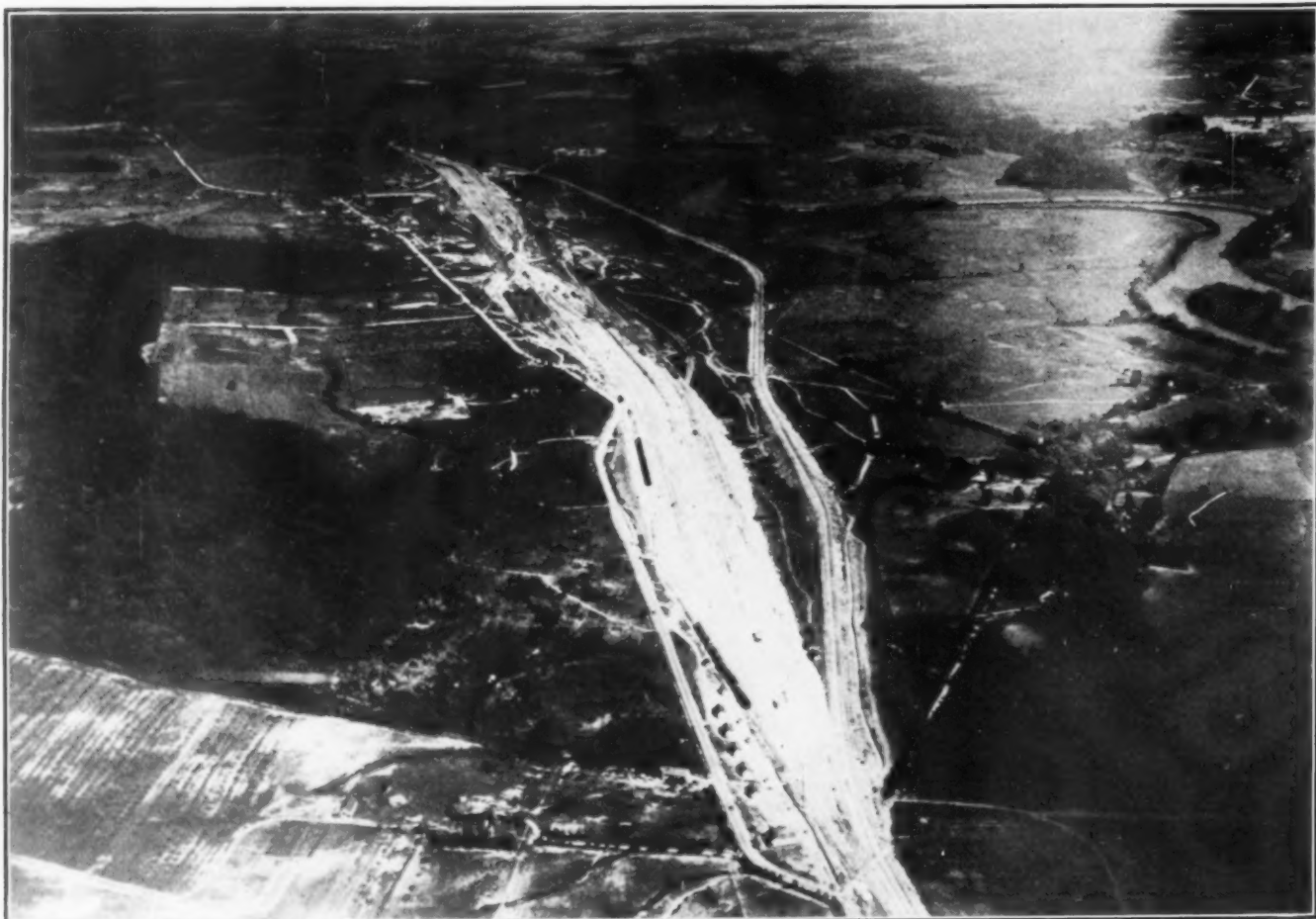
BREAKING GROUND FOR THE JOHN SEVIER YARD

amount of work involved.

The yard is about 3 miles in length and has a capacity of about 3500 cars. It has been so built that it can be expanded in the future to take care of 5000 cars. It is situated at the Knoxville Gateway which will greatly facilitate the handling of freight traffic in that section of the South.

The Foundation Company began work in July, 1924. A construction camp housing about 400 men was built and main-

tained until the job was completed. The first job on the program was the relocation of the double track main line which cut through the heart of the land set apart for the new yard and which had to be moved to the south of the yard in such a position that



THE MAGNITUDE OF THE YARD CAN BE JUDGED FROM THIS AIRPLANE VIEW

would allow room for future expansion. It was necessary to complete the new main line tracks before the heavy grading for the new yard could be undertaken.



FILLS LIKE THIS WERE THE RULE

Several of the photographs which accompany this article give a good idea of the immense amount of grading which had to be done. In all, about 1,007,600 cu. yd. of earth and 109,550 cu. yd. of rock had to be



WOOD'S CREEK CULVERT SHOWING 40 FT. FILL

removed. Steam shovels and dump cars handled this part of the work. In addition to the grading and track construction a number of buildings were included in the construction program. The largest unit is the round house containing 34 stalls. Repair shops, store houses, water tank, power house and various other structures necessary to a modern railroad yard also

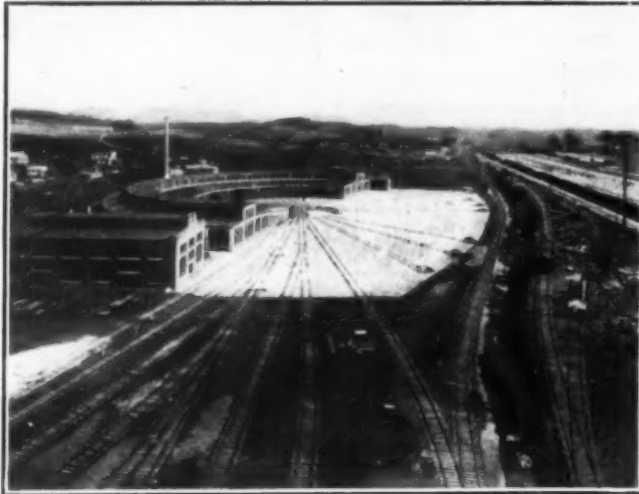


ROUND HOUSE IN CENTER AND YARD IN FOREGROUND

had to be built. A concrete arch culvert 20 ft. in length carries Wood's Creek under the yard and this culvert was built at a point where the deepest fill, approximately 40 ft. in height, was required.

The yard itself is what is known as a clearing yard and consists of separate eastbound and westbound receiving and classification yards with suitable repair yard, caboose yards and engine terminal facilities. A transfer yard for less-car-load freight, a stock yard and an ice station also were built.

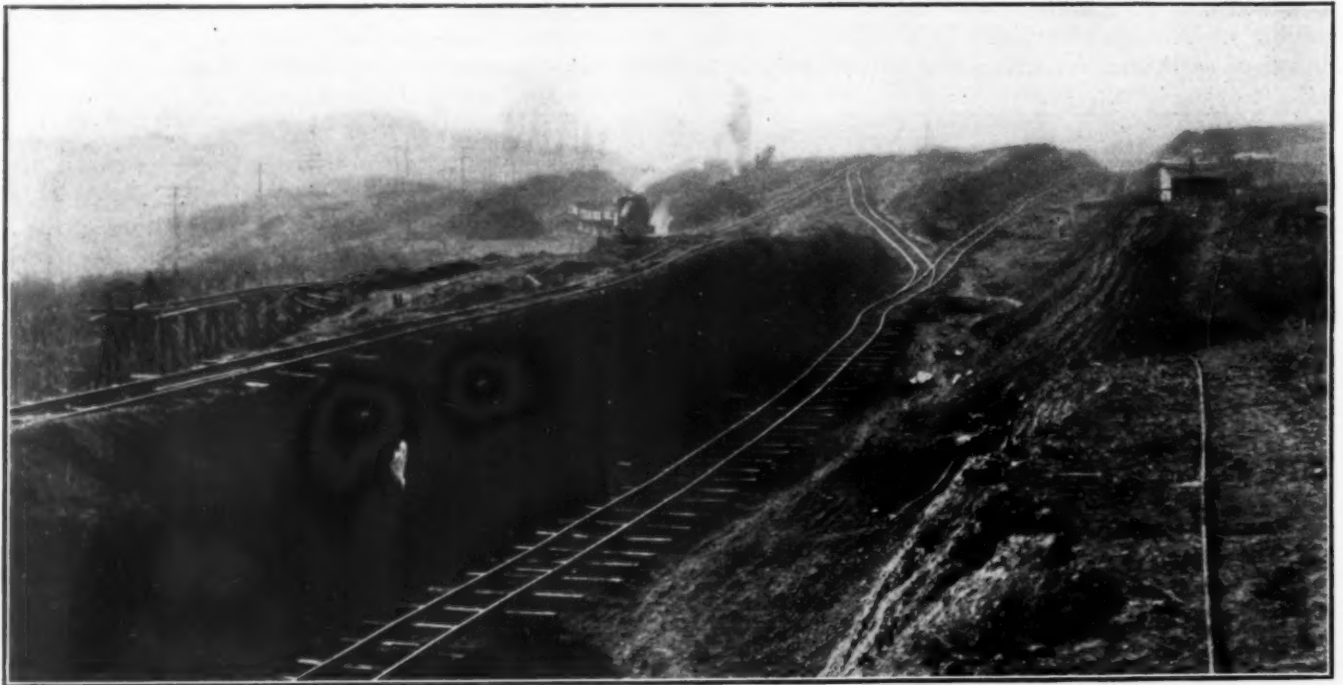
The freight yard is divided into two sections. The westerly half consists of 9 tracks for westbound classification and seven tracks of the eastbound receiving



A CLOSE UP OF ROUND HOUSE

yard. The easterly half includes 7 tracks for westbound receiving and 10 tracks for eastbound classification. Both the easterly and westerly halves of the yard are equipped with humps, track scales and scale houses. The entire water supply of the yard is taken from the Holston River. A reservoir holding about 2,000,000 gal. was built in order to take care of the yard service. The entire yard is lighted by 54 flood lights distributed on 8 steel towers.

The John Sevier Yard was put in operation in October of last year and is now handling a large number of cars daily. It ranks with the large terminals of the Southern Railway at Inman Yards, Ga., Spencer, N. C., and Hayne, S. C.



GRADING OPERATIONS IN FULL SWING

MINNESOTA BUYS CEMENT FOR STATE HIGHWAYS

MINNESOTA has joined the list of states which is buying cement in advance. Charles M. Babcock, State Highway Commissioner, recently received bids for approximately 600,000 bbl. of cement to be used during the construction season for pavement and bridge construction on state highways. This practice of buy-

ing cement in bulk has been tried by other states with considerable success. In Illinois the state buys about 3,500,000 bbl. and Wisconsin recently purchased 1,000,000 bbl. for highway work.

Minnesota is planning to build about 170 miles of new concrete pavement during 1926.

DETROIT CONTRACTORS STUDY SAFETY MEASURES

Committee Has Been Working on Problem for the Last Five Years—Good Results Accomplished

FOR the last five years the General Builders' Association of Detroit has been following a well organized program with a view to preventing so far as possible accidents on construction work. A special accident prevention committee consisting of one man from each of the member firms, the secretary of the association, the insurance representative and the chief inspector have had charge of this work and have been meeting once a week.

At a result of their work they have reduced greatly the number of accidents occurring on construction jobs in Detroit and have plotted a chart which shows the measure of success with which they have met. This

chart, which unfortunately cannot be reproduced here, covers the period from January, 1919, to September, 1925 and shows that although there has been a steady increase in the volume of building in the last four years, there has not been a corresponding increase in the number of accidents and time lost through accidents. The chart records the number of deaths, the cases of permanent total disability and also the cases of permanent partial disability.

Contractors' associations who are interested in following the work which has been done by the Detroit committee should write to J. Wilson Robinson of the Everett Winters Co., 1024 Book Building, Detroit.

HISTORY ON THE HIGHWAY

FOLLOWING the example set a year or two ago by New Rochelle, N. Y., the City of Schenectady has placed some historical signs wherever main highways cross the city limits. Three of these attractive sign posts are shown in the photograph at the bottom of this page. The wrought iron decorations on the

tops of the signs depict the events referred to on the signs themselves. Signs of this character afford a pleasing variation from the monotony of the ordinary highway sign, and the motorist who sees them is very likely to carry away with him a pleasing memory of the city which puts them up.



HISTORICAL SIGNS MARK LIMITS OF SCHENECTADY

© K-H

BIG HIGHWAY BRIDGE GOES INTO SERVICE

Steel Draw Span at Ashtabula Installed Between Sunrise and Sunset

INSTALLING the new highway bridge over the river at Ashtabula, Ohio, recently called for quick work as it was stipulated that traffic on this leading thoroughfare could not be interrupted for a longer period than

The bridge is operated by two 50 hp. motors. It is declared to be absolutely foolproof because of the safety devices that have been installed. When the bridge gets to a certain point, it stops automatically, whether the operator wants it to do so or not. It is so perfectly balanced that three men out on the end of it, when once the brakes are released, will lower it.

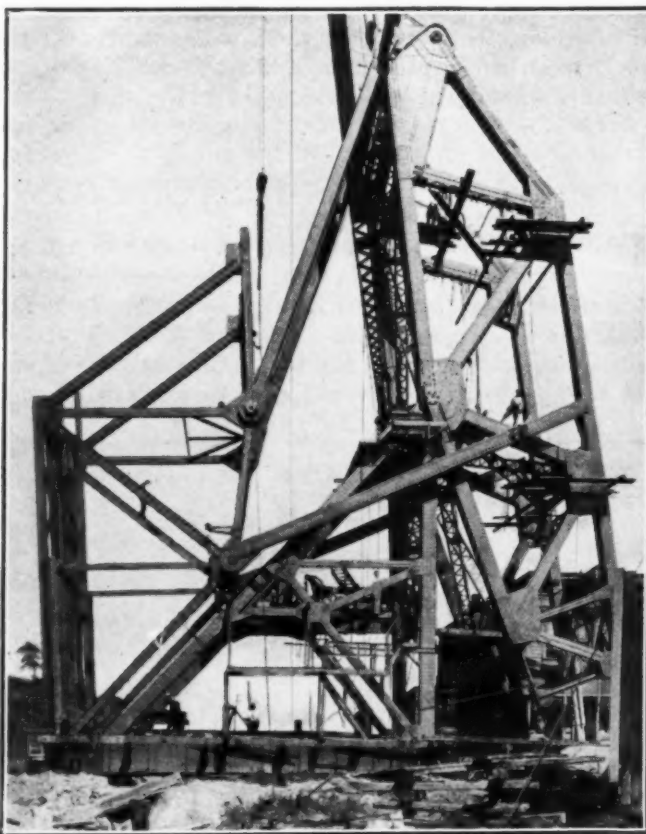
It is known as the Brown Mystic type of bridge, being so called because the first bridge of this type was built over the Mystic River, in Massachusetts. This is



THE NEW BRIDGE SHORTLY BEFORE COMPLETION

from sunrise to sunset. This bridge is on the main highway between Buffalo and Chicago. Then, too, so many ore boats use the river that its channel could not be blocked for any length of time.

It was necessary, in the allotted time, to lower the bridge, put on the asphalt paving for the floor, and at the same time place enough counterweight to raise the bridge. The bridge weighs 600 tons, and is 250 ft. long, with a width of 36 ft. About 650 tons of concrete was required for the counterweight.



A CLOSEUP OF THE BIG STEEL STRUCTURE

the second bridge of this kind. It was designed by Thomas E. Brown and Wendell P. Brown, Cleveland. The Kelly-Atkinson Co., Chicago, had the contract for the superstructure complete.

TRACTOR WORKS IN ZERO WEATHER

Caterpillar on Cover Is Engaged in Development Work in Alaska

THE photograph on the cover of this issue of **SUCCESSFUL METHODS** shows a veteran tractor at work in Alaska. The machine, which is owned by the Alaska Engineering Company, has been housed in until

it resembles an army tank in order that the operator may work without freezing. The machine is a Best Sixty which since the consolidation of the Best and Holt companies is known as a Caterpillar Sixty.

WORKING ON THE SKYLINE

Gasoline Locomotive Proves Invaluable in Operating of Feldspar Mines High Up in North Carolina Mountains

MACHINERY that has to be operated in mountainous country where it is difficult to bring in supplies must be of sturdy construction. Under such conditions frequent repairs are impossible and the machine which cannot keep running day in and day out is next to useless.

The photographs on this page show the equipment of the Erwin Feldspar Company, which operates mines at an elevation of more than 4000 ft., near Spruce Pine, N. C. The Plymouth gasoline locomotive shown in the photographs is used to haul feldspar two miles from the mines to the head of an inclined railway. The latter leads down to a concrete highway over which final delivery to the main line railroad is made in motor trucks.



PERCHED ON THE MOUNTAINSIDE

As may be seen in the lower photograph, the feldspar is hauled out in trains of six cars, each holding 2½ tons of material. The locomotive at present on the job has been working for two years, and although it operates over rough, uneven track, containing numerous very sharp curves, as well as handles, the cars on grades up to 4 per cent, its repair bills have been less

than \$10 per year, a remarkably low figure.

The mines of the Erwin Company are so isolated that gasoline equipment is ideal for the job, as the lack of roads which make the cost of delivering coal for a steam locomotive prohibitive. The maintenance of a water supply also is eliminated. W. F. Dineen is General Manager of the Erwin Feldspar Company.

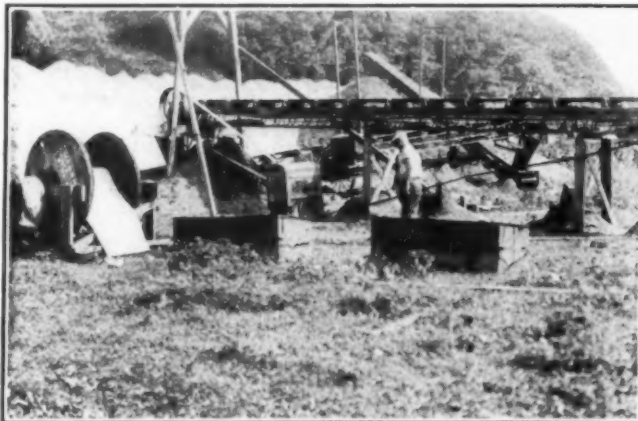


LOCOMOTIVE WITH TRAINLOAD OF FELDSPAR LEAVING OPEN-PIT MINE

CONVEYORS SOLVE GRAVEL HANDLING PROBLEM

Transfer Material for Highway Work from Barges in Ohio River to Storage Piles on Roadside

MUCH of the gravel used by the State Highway Department for surfacing and maintaining roads in southern Ohio is obtained from the bed of the Ohio River. H. A. Carpenter of Marietta has had a contract for supplying this gravel to the State Highway Department. The places where the gravel is to be stored are selected by the highway department, and Mr. Carpenter's problem is to transfer the gravel from the bed of the river to the points selected by the highway officials. He has solved this problem by the use of Barber-Greene portable and permanent conveyors which are used to

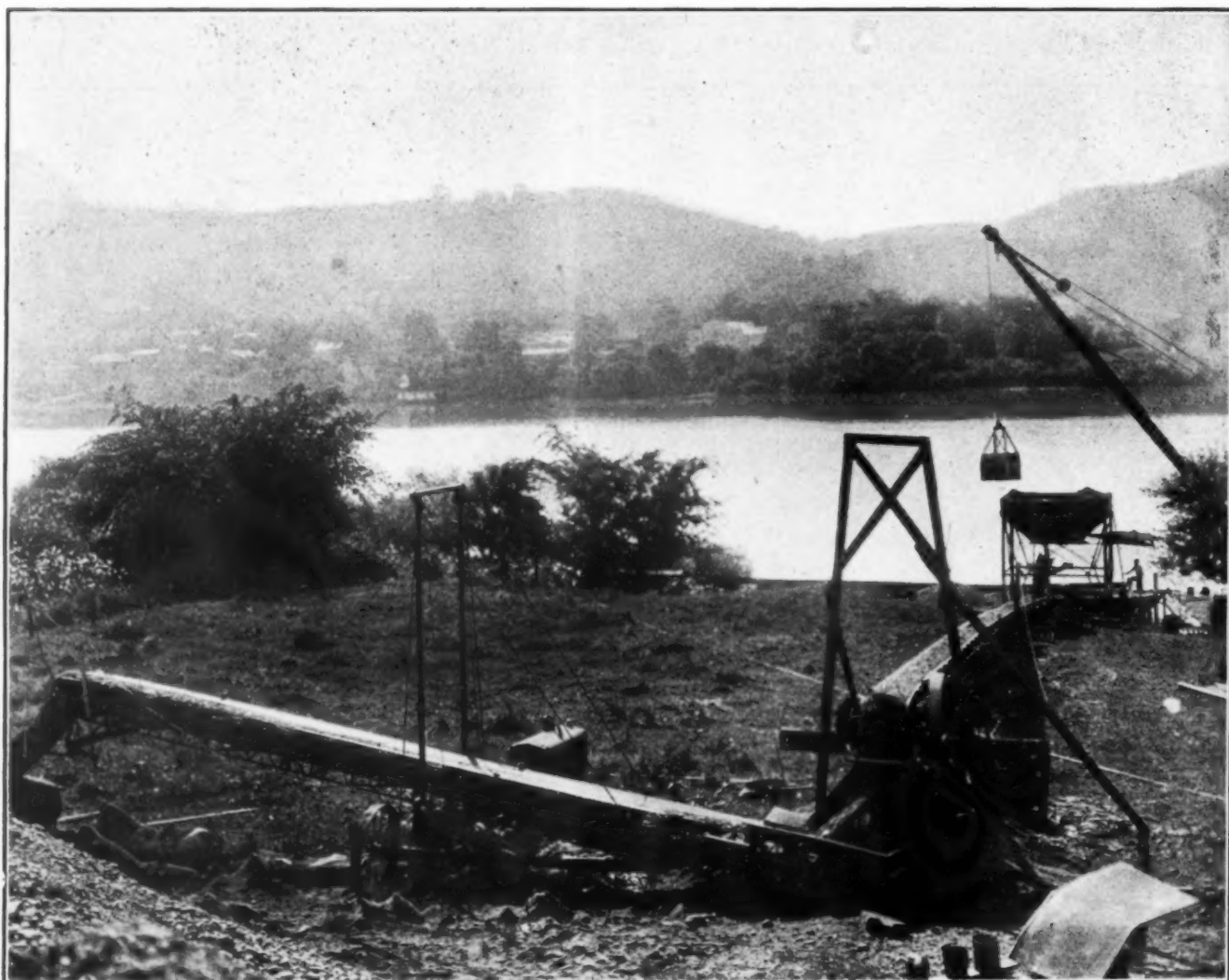


ALL THREE CONVEYORS MAY BE SEEN IN THIS PHOTOGRAPH

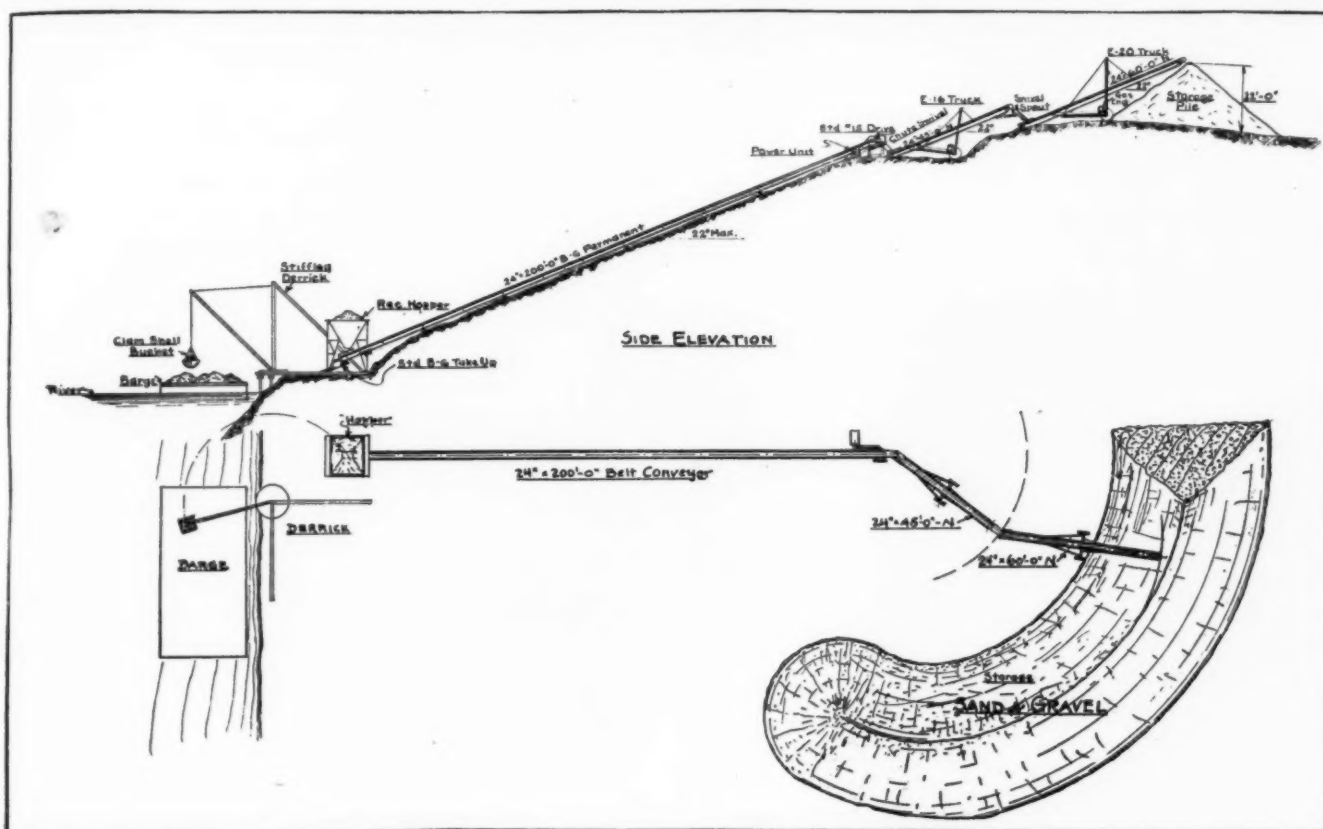
take care of the gravel as it is unloaded from barges and carried to the storage piles. Mr. Carpenter's outfit is so designed that the conveyors can be taken down, loaded into barges and moved either up or down the river to the next location.

The gravel dredged from the bed of the stream is brought to the shore in barges and unloaded with the clamshell buckets. These buckets deposit the material in a large receiving

hopper set up on the bank of the river over the end of a permanent conveyor. The length of this conveyor is regulated by the distance the material has to be car-



CONVEYORS IN OPERATION AT FLY, OHIO



SET-UP USED FOR STORING GRAVEL NEAR MARIETTA

ried from the river's edge, and sometimes only part of the permanent conveyor is set up. The sectional construction of the machine makes this possible as only as many intermediate sections as desired need be used. The extreme length of Mr. Carpenter's conveyor is 200 ft., and the photograph at the bottom of page 10 shows it operating at that length.

A regulating gate spreads the gravel from the large receiving hopper and the conveyor carries it to a Barber-Greene portable conveyor 45 ft. in length, equipped with a 24-in. belt. This machine is equipped with swivel wheels and so can be moved in a semicircle with its hopper as a pivot. This makes it possible to build a semi-circular pile instead of a cone-shaped pile.

Two of these portable conveyors, one 45 ft. in length and the other 60 ft. long, are used in order to get the material in one storage pile from one set-up. When the outside storage pile is completed, the 60-ft. conveyor is moved back a few feet and another semicircular pile built. This operation is handled by using the 45-ft. conveyor as an intermediary. It takes the material from the permanent conveyor and carries it back a few feet to the hopper of the 60-ft. conveyor.

This set-up may be seen in the small photograph at

the top of page 10. The discharge end of the 200-ft. permanent conveyor is in the foreground. The 45-ft. conveyor can be seen immediately beneath it with the 60-ft. conveyor in the right background distributing the gravel at the end of the big storage pile.

Because of the fact that the 200-ft. conveyor is moved from time to time and the belt has to be taken off and rolled up, Mr. Carpenter uses a 4-ply belt with a 1/16-in. rubber cover instead of the usual 5-ply belt with a 1/8-in. rubber cover. He has found that the lighter belt handles the work without difficulty. All three conveyors have gasoline engines.

With this arrangement of conveyors Mr. Carpenter has handled as much as 30,000 yd. of gravel at one unloading point. The conveyors are able to take care of the maximum capacity of the clamshell bucket, and with the entire outfit working steadily he has unloaded and stored 8 barges in 8 hr. When all of the material has been stored at any one point, the dredging equipment and the conveyors are taken down, loaded on the barges and moved. Four of these outfits have been in operation during the road-building season just ended, and will continue to work this year when the work gets under way again.

CLEMMER LEAVES ILLINOIS HIGHWAY DEPARTMENT

H. F. CLEMMER, who since 1920 has been Engineer of Materials for the Department of Public Works and Buildings, Division of Highways, of the State of Illinois, and who has written several articles for SUCCESSFUL METHODS, has resigned to accept a position with

the Solvay Process Company, Syracuse, N. Y. V. L. Glover has been appointed to succeed him. Mr. Glover is a graduate of the University of Illinois and has served the Department since 1917. He is well equipped for his new work by training and experience.

POSTERS DIGNIFY CONSTRUCTION

British Artist Uses Uncompleted Building in Campaign to Raise Funds

THE artistic value of a building while under construction is usually the last thing which any one thinks about. Joseph Pennell has selected construction

Frank Bragwyn, a member of the Royal Academy. He departed entirely from the usual practice of showing how the building for which money is sought will look when completed, and illustrated his subject by showing one of the proposed buildings actually under construction. This poster has the appearance of a great etching in sepia and has helped greatly in raising the funds desired for the extension of Leeds University.

The other picture selects a building under construction as an effective means of reminding a passerby to use posters for the purposes of building up their own business.



A SPLENDID REMINDER OF HOW THE MONEY WILL BE SPENT

jobs as a theme for many of his best known works and the illustrations on this page show that in England the artistic possibilities of construction work are being realized.

The two pictures shown on this page both have buildings under construction as their subjects. The picture of the Leeds University building fund was drawn by



DIGNIFYING CONSTRUCTION

RECLAMATION BUREAU IS BIG FACTOR IN CONSTRUCTION

THE great work that the Bureau of Reclamation of the United States Department of the Interior is doing is not as well known as it should be. The Bureau is continually working on projects for reclaiming arid lands in the western part of the United States.

The photographs on the opposite page show three government irrigation dams which have either recently been completed or are at present under construction.

The first picture shows the Tieton Dam in Washing-

ton which was recently finished. It is 321 ft. in height and impounds 202,500 acre ft. of water.

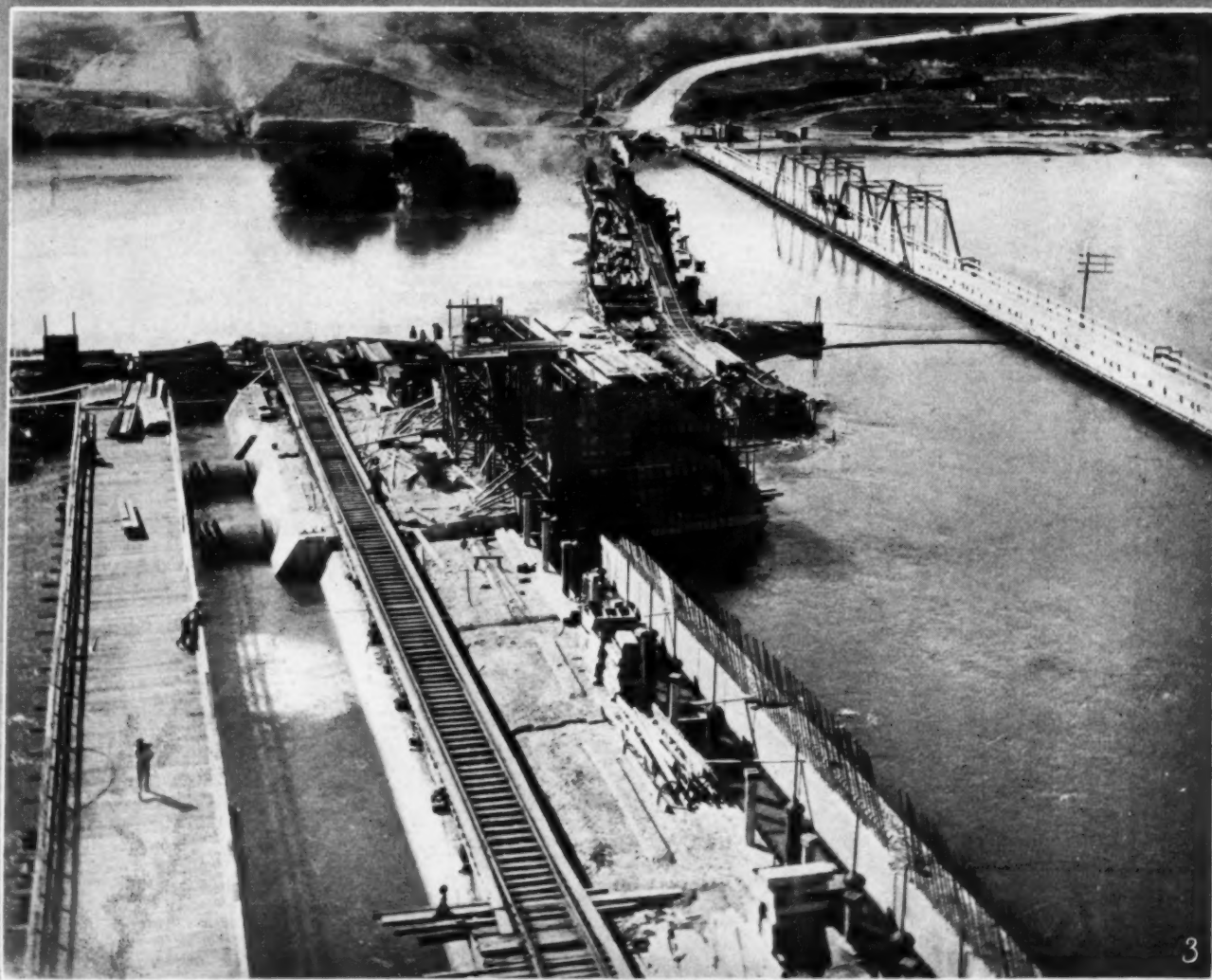
The second photograph shows the Gerber Dam in the Klamath Irrigation project which is partly in Oregon and partly in California. This dam has a capacity of 94,000 acre ft.

The third photograph is of the American Falls Dam on the Snake River, Idaho, which is still under construction.

Three Government Dams



2



3

1. Tieton Dam, Yakima Irrigation Project, Washington. 2. Gerber Dam, Klamath Irrigation Project, Oregon, California.
3. American Falls Dam, Snake River, Idaho.

CRANE HANDLES EMERGENCY JOB

Responds to Call for Help When Knoxville Water Main Breaks and Ties Up Traffic on Busy Street

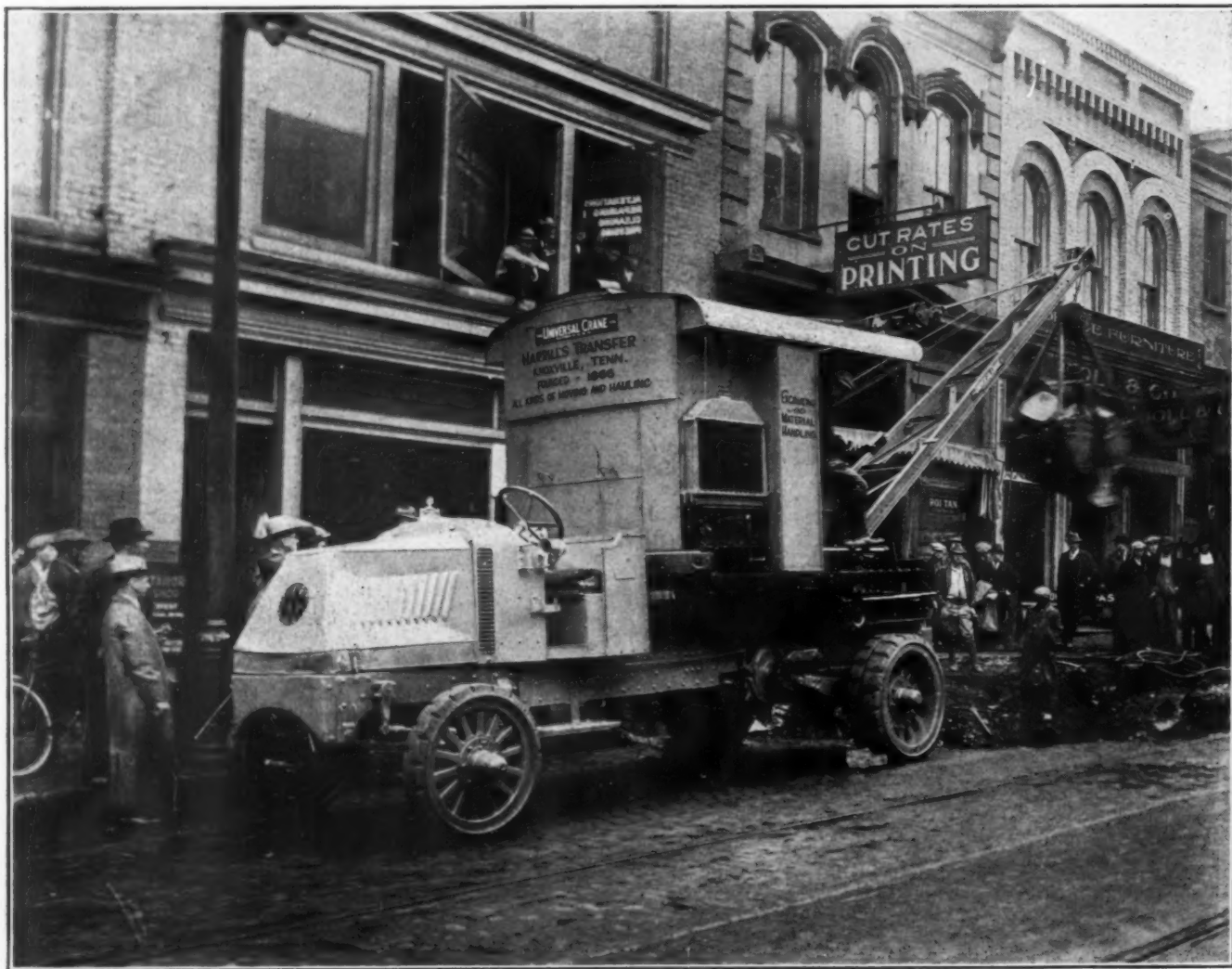
A BROKEN water main under one of the busiest streets in Knoxville, Tennessee, recently gave the Harrill Transfer Company of that city a chance to prove the ability of their Universal Crane to handle emergency jobs. The break occurred on South Gay Street, between Church and Cumberland Avenues and was discovered when one of the stores reported that it could not obtain any water. An examination disclosed a huge cavity extending under the store and across the street passing under the car tracks.

All traffic was immediately stopped with the exception of the street cars and after a few hours they were stopped, as the ties began to settle. Col. F. Walbert of the Water Department called on emergency equipment to help in the job of filling up the hole and the Harrill Transfer Company sent its crane which is mounted on a Mack truck. The crane was brought across the city at motor truck speed from a car unloading job and was immediately put to work cleaning

out the debris. Despite the handicap of working under trolley wires the crane cleaned up the hole which averaged from 8 to 15 ft. in depth and removed 200 yd. of material in the afternoon and evening. The crane worked continuously until 4:45 the next morning, a stretch of 16 hr. The photograph at the bottom of the page was taken soon after the machine went to work.

As fast as the hole was cleaned out, trucks filled it with crushed rock and gravel. It was estimated that the prompt arrival of the crane and the work it was able to do cut the repair time about 50 per cent and made it possible to reopen the street to traffic at a much earlier time than would otherwise have been the case.

When the crane had finished its emergency job it returned to its work of unloading cars. The Harrill Transfer Company which was established in 1866 has been using this crane for car unloading, steel erecting, digging pavements, streets and trenches and placing cast iron water pipes.



CLEANING OUT THE BIG HOLE MADE BY BREAK IN WATER MAIN

HIGHWAY BRIDGE WILL SPAN NIAGARA RIVER

Work on Structure, Which Will Be Nearly a Mile in Length, Is Now Well Under Way

ONE of the most important highway bridges now under construction will cross the Niagara River between Buffalo, N. Y. and Fort Erie, Ontario. Work on this structure has been going on since last August when the International Joint Commission recommended approval of the bridge. The contract had previously been awarded and actual work was under way within a week or two after the Commission issued its approval.

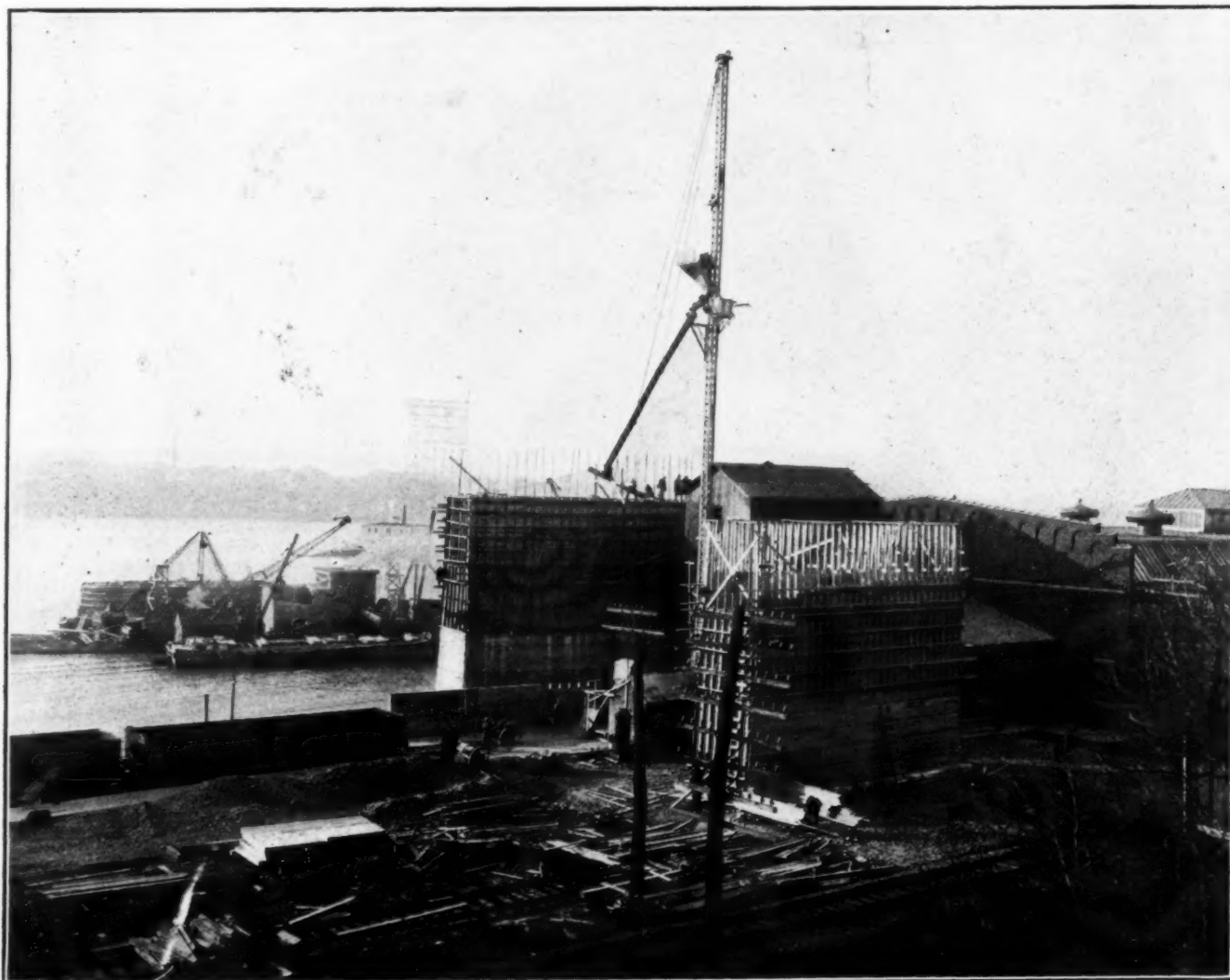
The plans for the bridge provide for four steel arches over the river with a total length of 1655 ft. In addition there will be a through truss 36 ft. in length over the Black Rock Canal and long approaches on each side of the river. This will give the bridge a total length of almost a mile. The span over the ship canal will provide a clearance of 100 ft. and this will be the high point of the bridge. There will be a declining grade of about 30 per cent over the four arch spans toward the Canadian side.

Before the cold weather caused the cessation of work,

several of the piers had been built and two caissons were towed into position. These caissons are at present anchored in the river waiting for spring. The job of getting the caisson on the American side into position nearly proved disastrous as the current started to drag tug and caisson toward Niagara Falls. A hurry call brought more tugs and saved the situation in the very nick of time.

The photograph at the bottom of the page shows two of the concrete piers under construction on the American side. The caisson which nearly got into trouble is shown in the stream at the left.

The new bridge is the first bridge for vehicular traffic across the Niagara River, although there are two railroad bridges. It will form a connecting link between the United States and Canada and in addition will shorten the distance by direct highway between Detroit and the Atlantic seaboard, and as a result will undoubtedly carry a great volume of motor traffic.



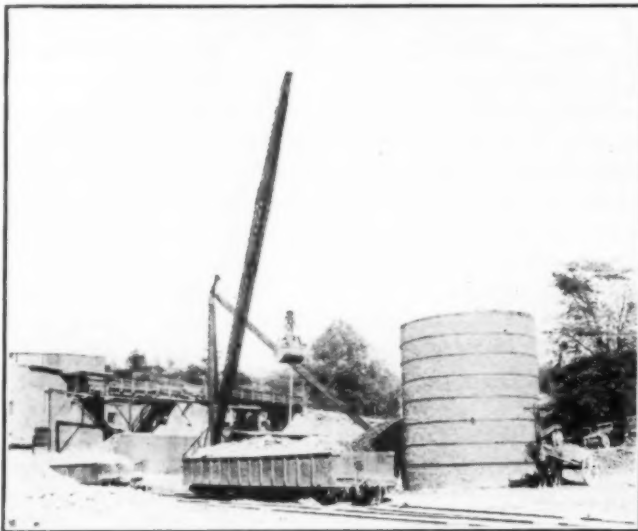
AT WORK ON THE CONCRETE PIERS OF NIAGARA RIVER BRIDGE. ONE OF THE CAISSONS MAY BE SEEN IN THE RIVER

DERRICK KEEPS BUSY AT CLAY PRODUCTS PLANT

Handles Coal Supply, Delivering It at Several Points

A DERRICK that is strategically placed can handle a considerable volume of work. The Adams Clay Products Company of Martinsville, Ind., has a Clyde steel stiff leg derrick which is shown in the photographs on this page, and it is kept busy practically all of the time.

The main highway, at the side of which is an interurban electric line, runs directly back of the brick silo shown in the photographs. This silo is used for storing coal, and the derrick not only unloads coal from cars, but also unloads coal which has been shipped in. Its swing of 180 deg. makes it possible to deliver coal either from

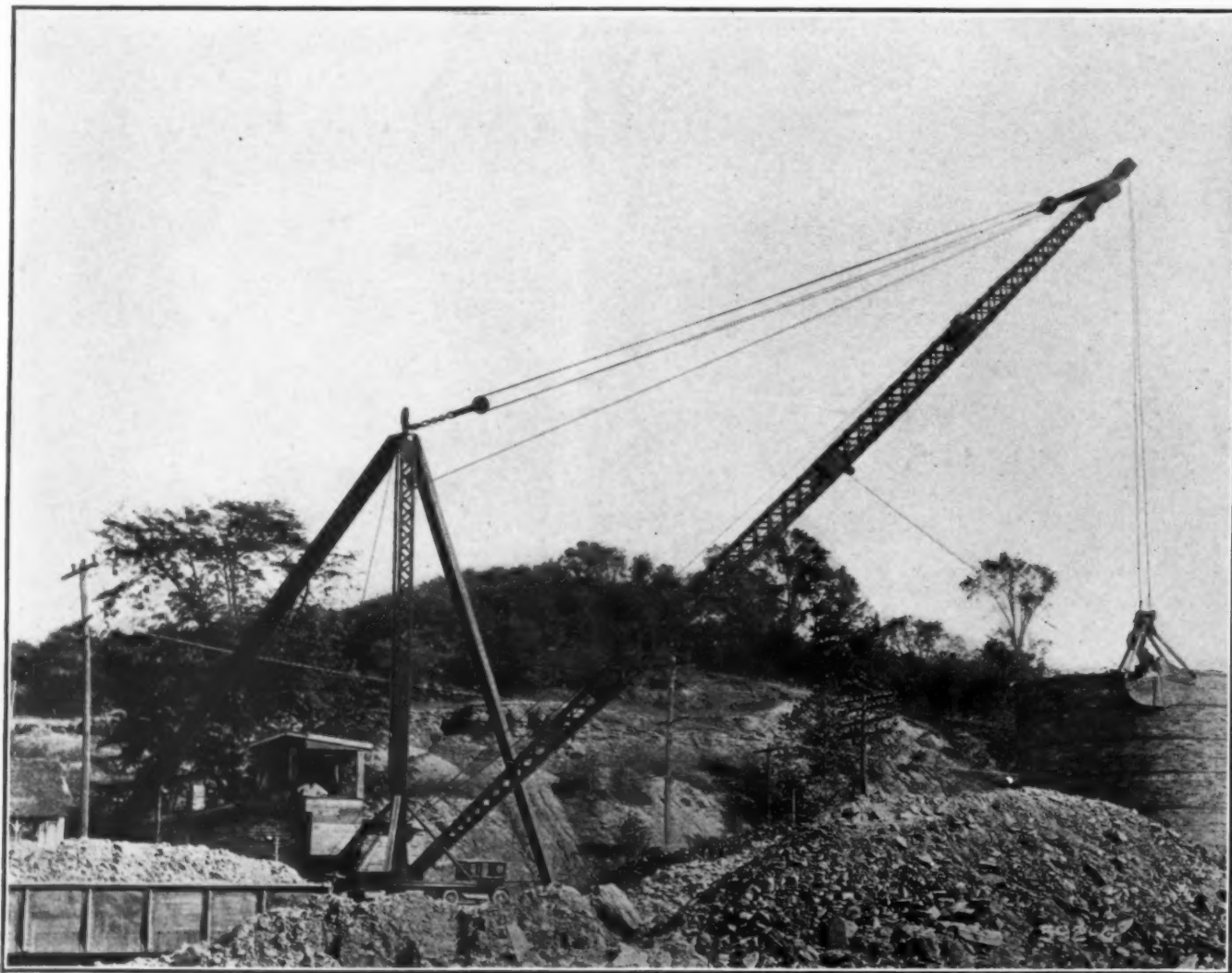


UNLOADING CARS

the regular stock piles or to a small storage pile which is used for machines on the lower floor of the plant.

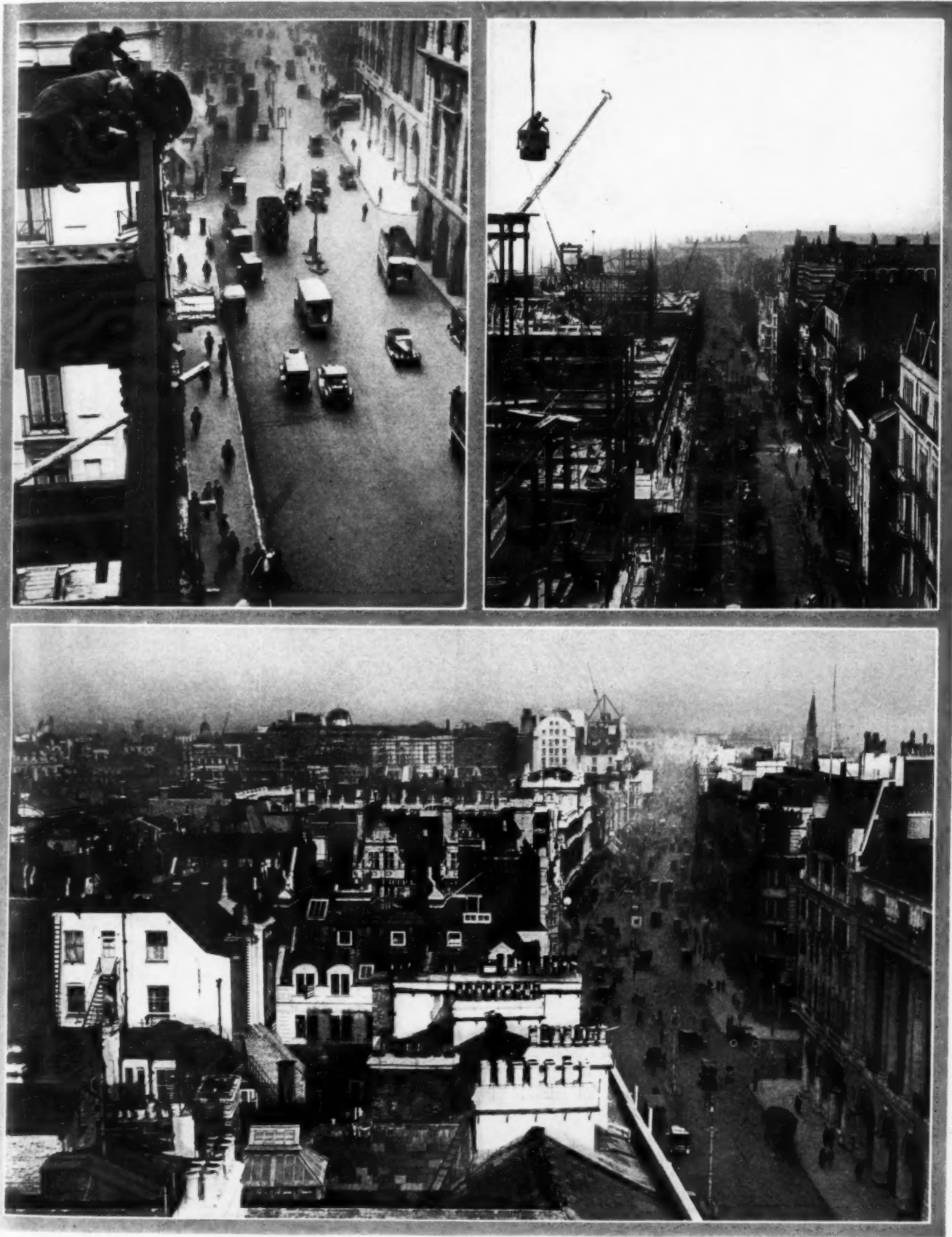
On the trestle shown in the background of the upper photograph there is a hopper with a bucket conveyor operating through it to the machines in other parts of the plant. The derrick is used to charge this hopper. This trestle leads from the plant over the main highway and interurban line and down an incline into the quarry, and small cars bring the material from the quarry up to the plant.

Frank Rose is the Secretary and General Manager and Fred Cunningham is President of the Company.



AT WORK STORING COAL IN BRICK SILO

Even London Isn't Finished



Cities that are never finished are not peculiar to the United States. The three photographs on this page were taken from the roof of a new building in Piccadilly, London, and close inspection of the lower photograph will reveal construction jobs under way in every direction.

© P. & A. Photos

FORETHOUGHT IN BRIDGE DESIGN PROVES A MONEY SAVER

Concrete Span Almost Fifty Feet Long Removed to Let Dredge Pass Through

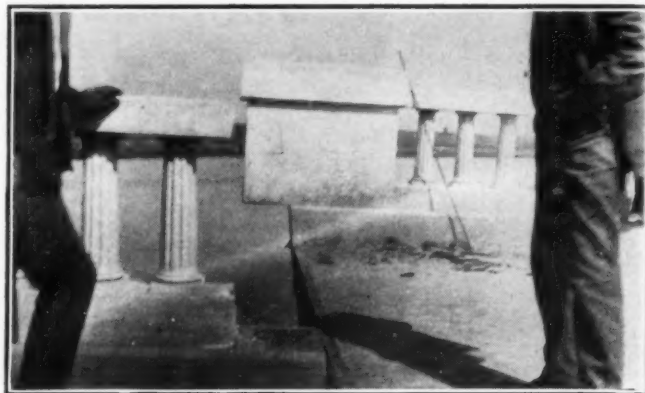
THIS is the season of the year when the men in charge of bridge design in the various state highway departments have plenty of time to think up new types of bridges. Actual construction work is at a standstill in most states and they are free to devote their minds to devising ways for meeting the needs of their states so far as the construction of highway bridges is con-



THE DREDGE WHICH MADE THE OPERATION NECESSARY

cerned. A few years ago the California Highway Commission was planning a concrete bridge across Alamitos Bay and foreseeing the necessity of permitting a dredge to pass through the bridge at some future time constructed the center span in such a way that it could be removed.

This forethought proved its value later on when the

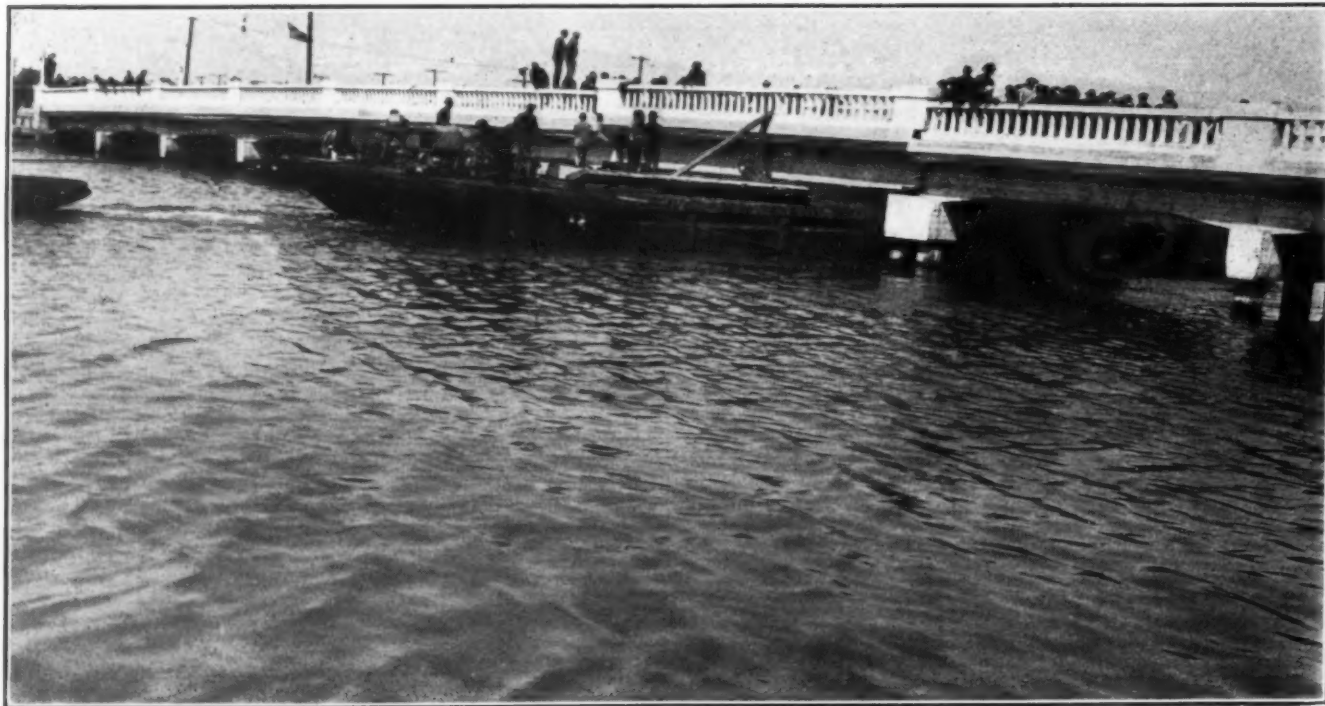


RAILING OF BRIDGE AS CENTER SPAN WAS LOWERED

city of Long Beach decided to send a dredge up the bay in order to construct its recreation park. The photographs which accompany this article show very clearly how the center span of the bridge 46 ft. long and 26 ft. 10 in. wide was removed in order to let the dredge pass through and then replaced.

As a result of this planning in constructing the removable span the Highway Commission succeeded in moving and replacing the span at the small cost of \$500 and the entire job was done with such dispatch that the bridge was closed to traffic only five hours.

The span was removed by placing a barge 104 ft. in length and 30 ft. in width by 9 ft. deep, under the span at low tide. The barge lifted the span from place as the water rose in the channel. It was then floated



TIDE LIFTING CENTER SPAN OF CONCRETE BRIDGE



THE DREDGE PASSING THROUGH OPENING WITH JUST ROOM ENOUGH TO SNEAK BY

out into the stream and the dredge towed through the opening, after which the span was floated back and lowered into place as the tide went out.

No damage to the bridge was reported despite the fact that there was only a clearance of one-half inch

between the railing post on the movable span and end of the rail on the fixed span and a longitudinal clearance of one-half inch between the side of the girder and socket on the fixed end into which they fit. It was a close fit but there was just room enough.

It LOOKS Like New York but It IS Miami



CONVENTION AND ROAD SHOW SCORE SUCCESS

American Road Builders' Association Continues to Advance Cause of More and Better Highways

THE Annual Convention and Road Show of the American Road Builders' Association held in Chicago last month scored its usual success. Both Convention and Show were attended by men identified with the highway industry from every section of the country. The Coliseum and adjoining buildings were crowded once more with a vast array of exhibits of machines and materials used in highway work. Not a square foot of exhibit space was vacant.

The convention sessions at the Congress Hotel were better attended than those of any previous convention.

The plan devised by President W. H. Connell to divide the convention into two sections worked most successfully, and the constructors and engineers vied with each other to see which would have the greater attendance throughout the week.



EVEN THE EXHIBITS WORKED. THIS CRANE WAS KEPT BUSY FOR TWO DAYS

The annual election of officers was held during the convention and resulted in the selection of H. G. Shirley, chairman of the Virginia State Highway Commission, as President for 1926-1927. Mr. Shirley, who will take office in May of this year, has been engaged in road building for many years. He has had charge of paving in the cities of Baltimore and Washington, and went to West Virginia about two years ago. In the photograph at the bottom of this page which shows a group of officials and directors of the American Road Build-

ers' Association, Mr. Shirley may be seen standing immediately by President Connell.

The upper photograph shows how one of the exhibits at the Road Show, which happened to be among the early arrivals, was put to work installing other exhibits.



LEFT TO RIGHT—SEATED—FRANK TERRACE, PRESIDENT W. H. CONNELL, JOHN B. HITTELL. STANDING—T. J. WASSER, S. F. BEATTY, J. R. DRANEY, CHARLES M. UPHAM, H. G. SHIRLEY, SAMUEL HILL, JAMES H. MACDONALD, FREDERIC A. REIMER AND J. E. PENNYBACKER

The Universal Crane shown in the photograph, which is mounted on a Mack truck, turned up at the Coliseum a day or two before the Show opened. The committee in charge of getting the Show under way immediately commandeered the crane, and it spent the next two days hoisting a great variety of exhibits to the balconies. The photograph shows it in the midst of this work.

The annual banquet was the most successful ever held, the principal speaker being Charles M. Schwab, who came with a carefully prepared speech, and, becoming imbued with the enthusiasm of the gathering, threw away the speech and spoke extemporaneously for more than half an hour. The toastmaster at the banquet was Edwin P. Morrow, former governor of Kentucky.

Those who have been identified with the American Road Builders' Association for the last few years found

their enjoyment of the 1926 Convention and Road Show marred by the death of three of the directors of the Association. W. B. Keller, head of the Alabama Highway Department, died a month or two before the convention. Mr. Keller at the time of his death was a vice-president of the Association.

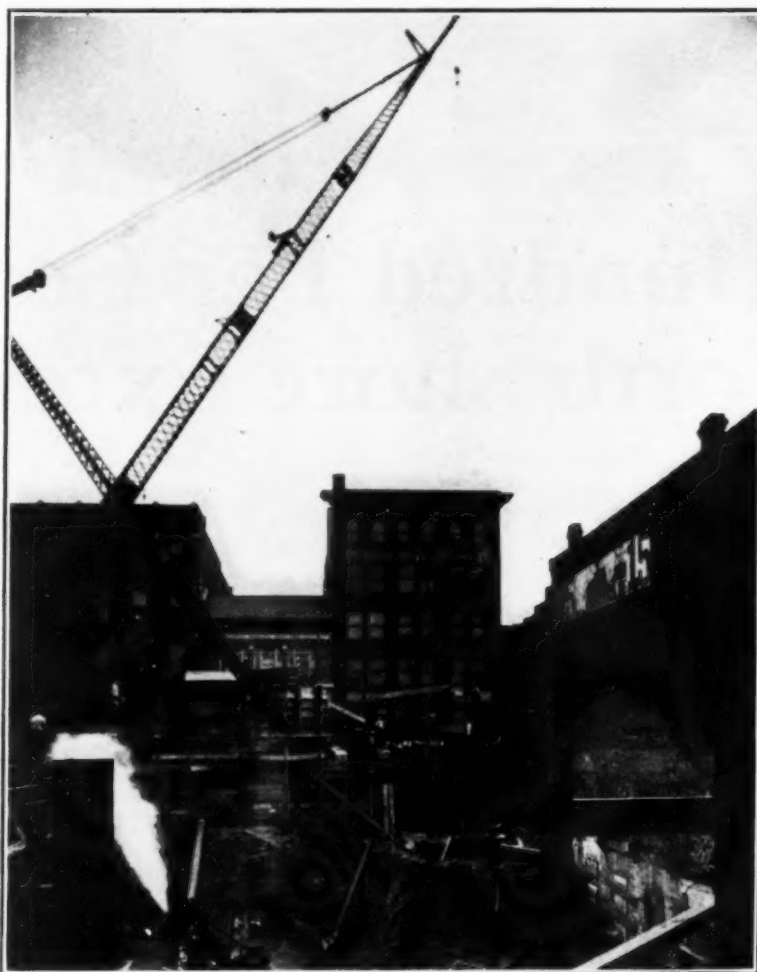
Only two days before the convention began two other directors died, Lewis S. Louer and William H. Stone. Mr. Louer was chairman of the Registration Committee and was working actively at the Association headquarters the afternoon before he died. Mr. Stone, who died in Baltimore, had been seriously ill for some time. Both Mr. Louer and Mr. Stone were engaged in publication work. Mr. Louer was one of the owners of "Engineering and Contracting" of Chicago, and Mr. Stone was a representative of the Manufacturers' Record of Baltimore.

SWINGING A SHOVEL AROUND

Toledo Contractors Use Derrick to Pick Up Heavy Machine

THE almost human intelligence of a power shovel is frequently commented upon but there are times when even an intelligent shovel has to call for help. An example of this is illustrated in the accompanying photograph which shows the excavation work for the new Ohio Bell Telephone building at Toledo.

Bentley and Sons, the contractors did the excavation for the telephone building with two Thew shovels, working them on two benches. One shovel handled the material up to the other which then loaded it into trucks on the street level. The upper shovel gradually backed itself into a corner of the excavation and Bentley and Sons found themselves confronted by the problem of how to get it out. They managed the job by simply hooking the cable of their stiff leg derrick to the turntable of the shovel lifting the house off the truck, depositing it



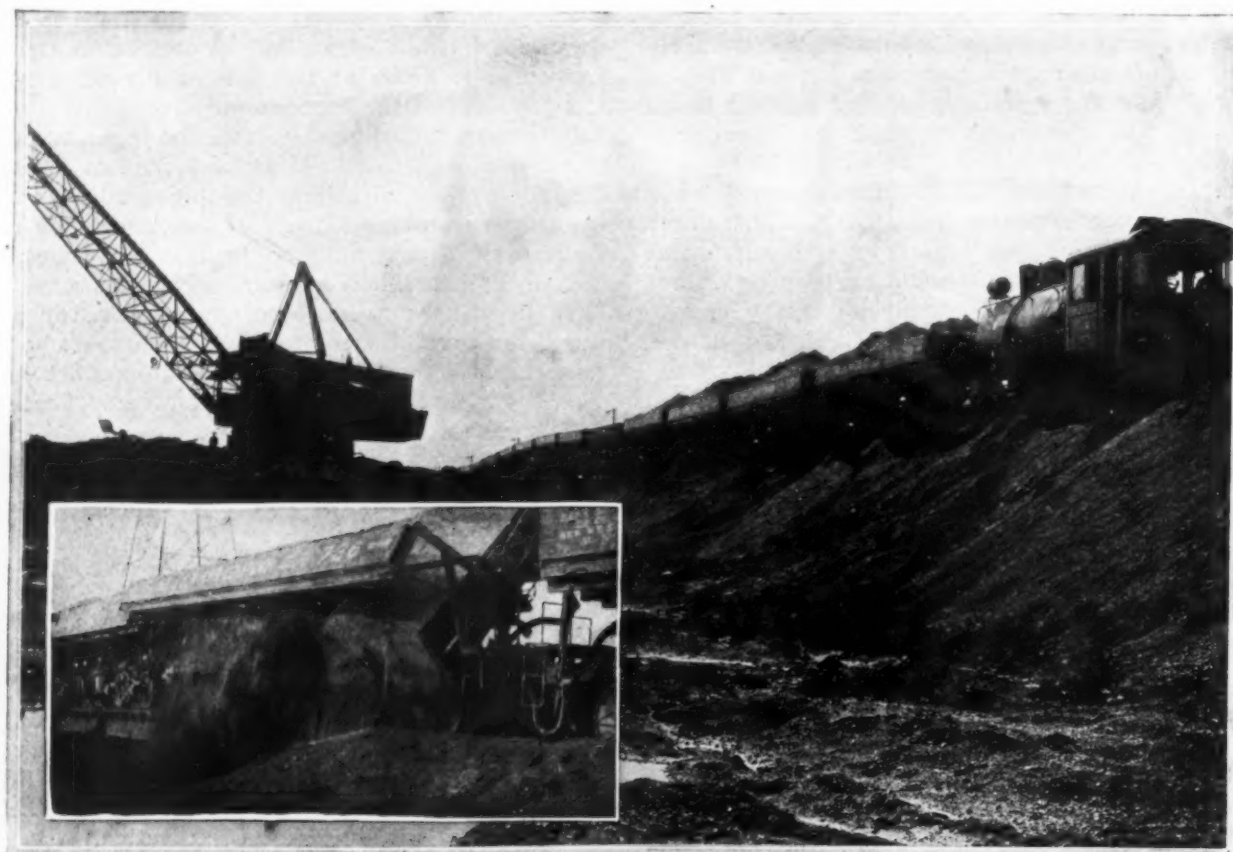
PICKING UP THE SHOVEL

on the street level and then picking up the center drive truck and lifting that out of the excavation.

The derrick then replaced the house on the truck and the shovel was ready to proceed to another job. The photograph shows the derrick in the act of replacing the house on the truck of the shovel. The boom is still lying in the excavation ready to be picked up.

The operation of getting the shovel out of the excavation and on the street attracted the usual throng of sightseers, most of whom were willing to bet that the derrick would not be able to handle the job. It was completed without mishap, however, and the shovel, which was a $\frac{3}{4}$ -yd. gasoline outfit, went

on its way to its next job none the worse for having been dismembered and swung through the air like a mere toy.



One Hundred Per Cent on the North Shore Extension

WITH an average haul of sixteen miles, one way; a maximum haul of thirty-two miles, and a great part of the work being done with a round-trip haul of fifty miles, the great problem was one of handling cars. The contracting concern, with thirty-six years of experience, chose seventy-five 20-yard Western Air Dump Cars, thirty-five 12-yard, and thirty-two 16-yard Westerns to handle the job.



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Every contractor who has used Westerns knows why. Their fast, clean-cut action, dumping either way, and their staunch dependability make them the logical selection for every job that involves the handling of earth or rock.

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